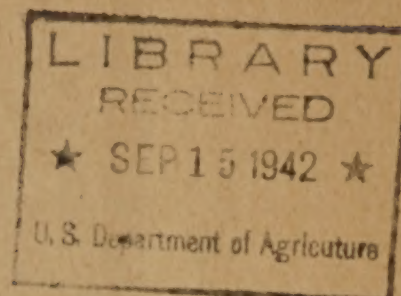


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UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics



ESTIMATES OF QUANTITIES OF FOOD NECESSARY TO PROVIDE CERTAIN
SPECIFIED DIETS AND CROP ACREAGES AND NUMBERS OF LIVESTOCK
REQUIRED FOR INDICATED PRODUCTION

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STATEMENT SUBMITTED TO THE SELECT COMMITTEE INVESTIGATING
NATIONAL DEFENSE MIGRATION, HOUSE OF REPRESENTATIVES

February 13, 1942

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ESTIMATES OF QUANTITIES OF FOOD NECESSARY TO PROVIDE CERTAIN
SPECIFIED DIETS AND CROP ACREAGES AND NUMBERS OF LIVESTOCK
REQUIRED FOR INDICATED PRODUCTION

An endeavor is made in the accompanying notes and tables to work out estimates of actual per capita consumption, of the per capita quantities of food necessary to provide certain specified diets, and of the acreage of crops and numbers or slaughter of the several classes of livestock which would be required at average yields to supply the specified diets for 133,900,000 people, our estimated population for 1942.

The extent to which these estimates are accurate or significant is of course limited by the accuracy and significance of the data and assumptions upon which they are based. As a result, all estimates and calculations in the accompanying tables are preliminary, and are necessarily subject to revision as additional data become available or as changes in underlying assumptions seem warranted.

Attention is called to the fact that these estimates are based upon the recent dietary recommendations of the National Research Council and the current structure of food consumption and agricultural production in the United States. That is, the specified diets or dietary combinations are designed to meet the nutritional standards recommended by the Council within the general framework of our current consumption pattern and the acreage and livestock estimates assume current yields and methods of production. Actually, of course, there are any number of dietary combinations which would satisfy the nutritional standards, and changes in yields and methods of production may well occur in the years ahead.

Table 1 shows the recommended dietary allowances compared with the nutritive value of food consumed during the five years 1936-40, with a suggested moderate-cost diet, and with a diet best adapted to current economic resources, or what would appear to be a reasonable combination of a low-cost, a moderate, and a liberal diet. The dietary standards are in terms of daily per capita allowances for food eaten, while the data relating to consumption and the specified diets are in terms of daily per capita supplies of food delivered to the kitchen or sold in the retail market.

Table 2 shows the per capita consumption of specified groups of foods estimated from production, foreign trade, and changes in stocks of agricultural commodities for 1936 and 1936-40; per capita consumption estimated on the basis of data obtained from housewives in survey-schedule and food-record studies for 1936; and per capita quantities required to supply a moderate-cost diet, a diet best adapted to current economic resources, and a best adapted diet with an additional allowance of 10 percent.

The moderate-cost diet plan would give consumers an adequate diet in terms of nutritional standards at a moderate cost, while the best adapted plan is based upon the assumption that all low-income families would follow a low-cost diet plan meeting certain minimum requirements, that all families with average or moderate incomes would follow the moderate-cost diet plan, and that all high-income families would follow a liberal diet plan or maintain food consumption at a relatively high level.

All of the per capita consumption estimates in table 2 are in terms of averages -- that is, many persons or families consumed more and many consumed less than the average for the entire population. The estimated quantities shown for the first two diet plans are based upon the assumption that per capita and per family consumption would be evenly distributed among the entire population or among the broad income groups for which different diet plans are assumed. But such an even distribution is not likely to be obtained, and as a result the third diet plan has been added. This third plan assumes that families in each different income group will use the diet best adapted to their economic resources, together with an extra allowance of 10 percent in order that families who are consuming in excess of the assumed diets may continue at the higher level.

Table 3 shows the acreages and livestock production required to supply 133,000,000 people with the specified diets described in tables 1 and 2, and compares these with actual acreages and numbers for 1936-40 and 1941. These actual acreages and numbers supplied domestic consumption and also allowed stocks of corn and wheat to be increased and considerable quantities of food to be exported during 1936-40 and 1941. The data and estimates in table 3 include no allowances for non-food and feed crops such as cotton, tobacco, and flaxseed, and assume that we will continue to import about the same quantities of such commodities as sugar and bananas as in the recent past.

In considering table 3, as well as the data and estimates in tables 1 and 2, it should be remembered that the problem involved is not simply one of increasing agricultural production. In any effort to move toward a more adequate and better balanced national diet, it is of course necessary that people generally should realize the need for and want a better balanced diet, and it is equally necessary that per capita and per family incomes should be sufficient to support the more adequate and better balanced diet. And even though the data and estimates in this statement indicate the need for a more adequate national diet, it should be remembered that the United States is today the best fed nation in the world.

In conclusion, it should be noted that the Bureau of Home Economics, and especially Dr. Hazel K. Stiebeling of the Division of Family Economics, supplied all the estimates or calculations shown in table 1 for actual consumption and the specified diets, as well as the survey-schedule and food-record estimates of per capita consumption and the estimates of the quantities of food needed for the specified diets shown in table 2. These data are basic to all the estimates shown in table 3, and their use is gratefully acknowledged.

* * * * *

This statement is identical with the original statement as submitted February 13, except that an additional column has been added to table 3 showing the acreages and numbers accounted for by domestic consumption after correcting for changes in stocks and foreign trade, average 1936-1940; and that the tomato acreage is included in "truck crops" rather than with "fruits" as in the original table 3.

Table 1.-- RECOMMENDED DIETARY ALLOWANCES COMPARED WITH NUTRITIVE VALUE OF FOOD CONSUMED IN 1936 AND OF FOODS SPECIFIED IN DIET PLANS AT THREE COST LEVELS: Daily per capita allowances based on National Research Council's recommendations, compared with daily per capita nutritive value of food supplies delivered to the Nation's kitchens or sold at retail /1

Nutrient	National Research Council's Dietary Standards <u>/2</u>	Estimated Per Capita Consumption, 1936-40 <u>/3</u>	Per Capita Requirements for:	
			Moderate-cost Diet Plan <u>/3</u>	Diet Plan Best Adapted to Resources <u>/3</u>
Food - energy calories	2,800	3,020	3,050	3,040
Protein grams	66	86	99	98
Calcium grams	0.9	0.9	1.3	1.3
Iron milligrams	12	15	16	16
Vitamin A value Int. units	4,700	7,800	9,700	9,800
Riboflavin milligrams	2.3	2.1	2.8 - 3.2 <u>/4</u>	2.8 - 3.2 <u>/4</u>
Thiamin milligrams	1.6	1.7	1.9 - 2.3 <u>/4</u>	1.9 - 2.3 <u>/4</u>
Ascorbic acid milligrams	70	100	115	125

/1. Averages for dietary standards and specified diets calculated by combining data for 15 age-sex-activity groups, basis 1940 census of population. Specified diets as suggested by Bureau of Home Economics, and per capita consumption as estimated by O. V. Wells from statistics of production, stocks, foreign trade, and waste in marketing, average 1936-40. /2. These figures represent food to be eaten and do not make allowances for extensive losses in cooking. /3. These figures represent food delivered to the kitchen. No deductions have been made for losses during cooking and service, which may be appreciable for thiamin and ascorbic acid; no deductions are made for table waste. /4. The lower figure given is based on the assumption that none of the white flour or bread consumed has been "enriched" in thiamin and riboflavin; the higher figure on the assumption that all has been enriched.

PRELIMINARY - Subject to Revision
 Table 2.- ESTIMATED PER CAPITA CONSUMPTION AND ESTIMATED PER CAPITA AND AGGREGATE QUANTITIES OF SPECIFIED GROUPS OF FOOD (RETAIL AND KITCHEN WEIGHT) NEEDED TO SUPPLY AMERICAN PEOPLE WITH LOW-COST, MODERATE-COST, AND LIBERAL DIETS WHICH MEET THE NUTRITIONAL LEVELS RECOMMENDED BY THE NATIONAL RESEARCH COUNCIL /1

Diet Plan	Milk /2	Pota- toes : sweet- : pota- toes	Beans : peas and nuts	Toma- toes and citrus fruits	Leafy, green, yellow vege- tables and fruits	Other : vege- tables and fruits	Eggs : and fish	Meat : poultry and fish	Flour : and other cereals	Butter : and other fats	Sugars /4
	qt.	lb.	lb.	lb.	lb.	lb.	doz.	lb.	lb.	lb.	lb.
Estimated from production, stocks, etc.: (a) for 1936											
(b) " 1936-40	173	136	11	86/5	65/5	197/5	22	134	197	66	74
	179	149	12	97/5	73/5	221/5	24	134	196	67	75
Estimated from consumer studies, 1936:											
(a) from food-estimate schedules	177	127	11	101/5	73/5	220/5	23	123	196	62	71
(b) from food records....	175	148	13	81/5	84/5	193/5	22	119	208	58	76
If all families followed:											
(a) moderate-cost plan...	300	155	12	100	166	195	25	131	186	57	57
(b) diet best adapted to resources /6	295	157	15	122	160	202	26	127	182	56	59
If all deficit diets were raised to best adapted level /6:	324	173	16	134	176	222	29	140	200	62	65

/1. Estimates of consumption from consumer studies and requirements for specified diets supplied by Division of Family Economics, Bureau of Home Economics. Estimates of consumption from production, foreign trade, changes in stocks, & waste in marketing supplied by O. V. Wells, Bureau of Agricultural Economics. All estimates exclude peanuts used for confectionery, eggs used by commercial bakeries, & sugar used by canners, bakers, etc. Preliminary all estimates subject to revision or correction. /2. Fluid whole milk & equivalent quantities of evaporated or dried milk or cheese. /3. Includes bacon & salt side as well as butter, margarine, oils, lard, & other table or cooking fats & oils. /4. Sugar & sirups, excl. sugar used by canners, bakers, confectioners, etc., which usually account for about one-third of total. /5. These quantities are based on urban consumption--all others national. /6. Average diet best adapted to economic resources, assuming all low-income families follow a low-cost diet plan, all average or moderate-income families a moderate-cost plan, and all high-income families a liberal diet plan. If diets of all families were raised to the best adapted level, without reducing those above such level, an additional allowance of about 10 percent would be required.

Table 3.- COMPARISON OF ACTUAL ACREAGES AND LIVESTOCK PRODUCTION WITH ACREAGES, PRODUCTION OR NUMBERS REQUIRED TO SUPPLY 133,900,000 PEOPLE WITH THREE DIETS WHICH MEET THE NUTRITIONAL STANDARDS ESTABLISHED BY THE NATIONAL RESEARCH COUNCIL

Item	Actual Acreages or Numbers			Acreages or Numbers for Specified Diets		
	1936 - 1940			Est. 1941	Moderate cost	Best adapted Straight Adjusted
	Total	Domestic use				
Column	(1)	(2)	(3)	(4)	(5)	(6)

FOOD AND FEED CROPS

		Thousand Acres		Thousand Acres at average yields		
TOTAL	327,180	311,321	323,996	321,102	319,238	351,162
Truck crops <u>/1</u> ...	4,127	4,144	4,339	6,575	6,597	7,257
Fruits	4,692	4,269	4,591	4,333	4,621	5,083
Potatoes	3,968	3,949	3,831	4,013	4,070	4,477
Beans, peas, nuts	4,524	4,484	4,803	3,979	4,730	5,203
Sugar and sirup <u>/2</u>	1,510	1,510	1,363	1,494	1,508	1,659
Grains for food...	73,107	62,463	64,562	57,310	57,599	63,359
Feed grains <u>/3</u>	153,157	148,252	148,785	149,174	147,074	161,781
All hay	69,025	69,469	73,933	83,104	82,053	90,258
Misc. crops <u>/4</u> ...	13,070	12,781	17,999	11,120	10,986	12,085

MEAT ANIMALS

	Millions of head slaughtered					
Beef cattle	15.2	15.2	16.6	15.2	14.7	16.2
Veal calves	9.6	9.6	9.3	9.5	9.2	10.1
Hogs	63.2	60.5	72.5	65.2	63.0	69.3
Sheep and lambs...	21.9	21.9	22.6	24.0	23.2	25.5
Chickens <u>/5</u>	644.0	644.0	<u>/5</u>	659.0	635.9	699.5

OTHER ANIMAL PRODUCTS

	Millions of laying hens and milk cows					
Hens <u>/5</u>	369.0	369.0	373.0	371.2	411.7	452.9
Milk cows <u>/6</u>	23.9	23.9	24.4	30.7	30.3	33.3

FOR FOOTNOTES, SEE FOLLOWING SHEET

(Revised June 22, 1942)

- Column 1: - Actual acreages and numbers available for food and feed purposes, including increases in stocks and exports, average 1936-1940.
- Column 2: - Acreages and numbers chargeable to domestic disappearance, average 1936-1940.
- Column 3: - Same as col. 1, except estimates for 1941.
- Column 4: - Acres and numbers to supply 133,900,000 people with an adequate diet at moderate cost, assuming consumption evenly distributed.
- Column 5: - Acres and numbers to supply a low-cost diet to all low-income families, a moderate-cost diet to families with moderate incomes, and a liberal diet to all high-income families, assuming consumption evenly distributed among families within each group.
- Column 6: - Same as col. 4, except over-all increase of 10 percent to allow for excess or above average consumption within each group.

PRELIMINARY - Subject to Revision

NOTES: ACREAGES AND LIVESTOCK PRODUCTION COMPARED WITH ACREAGES AND PRODUCTION REQUIRED TO SUPPLY 133,900,000 PEOPLE WITH THREE SPECIFIED DIETS

Acreage and number estimates are based upon per capita quantities of the several groups of foods required to meet the nutritional standards of the National Research Council as worked out by Dr. Stiebeling and associates in the Bureau of Home Economics. The "best adapted" diet is the diet that would result if all low-income families used the low-cost diet, all moderate-income families the moderate diet, and all high-income families the liberal diet.

Average yields for 1936-40, except yields for corn, oats, barley, and grain sorghums, are averages for 1935 and 1937-40. Animal yields are also for 1936-40 with average rations for livestock, adjusted to 1938-40. Acreages for corn, oats, barley, wheat, rice, grain sorghums, dry beans, potatoes (Irish), and sugar beets are planted. All other crops, acreages harvested.

- /1. Commercial truck crop acreage adjusted for farm and market gardens, cantaloups and watermelons included.
- /2. Average acreage for 1936-40 carried for all diets, assuming additional requirements are imported.
- /3. Acreage estimates for specified diets include feed requirements for livestock, and the following: Corn required for cornmeal and flour, corn sirup, sugar, and dextrin, corn cereals, starch (estimated at 25,000,000 bu.), alcohol and distilled spirits (estimated at 25,000,000 bu.). Oats required for oatmeal. Barley required for malt (estimated at 60,000,000 bu.).
- /4. Acreages are allowances for rye harvested, buckwheat, one-half of soybeans for seed, hops, popcorn, timothy seed, cowpeas harvested, velvet beans grown alone, sweet sorghums for forage, and peanuts grown alone but not picked and threshed.
- /5. Number of laying hens and chickens produced on farms, assuming non-farm eggs and chickens equal 10 percent of farm production. Estimate not available for chickens slaughtered, 1941.
- /6. Number of milk cows on farms, using allowance for feeding calves equal to 2.75 percent of milk for consumption, and assuming non-farm production of 2 billion pounds of fluid milk, and adding about 5.0 percent to the number of cows required for the several diets, to allow for ice cream, etc.

There would be 377,000,000 pounds of lard, bacon, and salt pork available for export with the "best adapted" diet, 531,000,000 pounds with the moderate-cost diet, and 415,000,000 pounds with the "best adapted" diet, adjusted. Certain imports, chiefly pineapples, bananas, olive oil, and sugar also would be required. Attention is called to the fact that all estimates and calculations are for food and feed crops, and that no estimates or allowances are included for cotton, tobacco, and oil crops which are not used directly for food.

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